

# CONSOLIDATED VERSION

## VERSION CONSOLIDÉE



**Electricity metering (AC) – Tariff and load control –  
Part 21: Particular requirements for time switches**

**Équipement de comptage d'électricité (C.A.) – Tarification et contrôle  
de charge –  
Partie 21: Exigences particulières pour les horloges de tarification**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### ELECTRICITY METERING (AC) – TARIFF AND LOAD CONTROL –

#### Part 21: Particular requirements for time switches

#### FOREWORD

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**This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.**

**This Consolidated version of IEC 62054-21 bears the edition number 1.1. It consists of the first edition (2004-05) [documents 13/1308/FDIS and 13/1317/RVD] and its amendment 1 (2017-01) [documents 13/1705A/FDIS and 13/1728/RVD]. The technical content is identical to the base edition and its amendment.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62054-21 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

This standard, in conjunction with IEC 62052-21, cancels and replaces IEC 61038:1990, *Electricity metering – Tariff and load control – Particular requirements for time switches* and all amendments. .

This standard is to be used in conjunction with IEC 62052-21 and the relevant parts of the IEC 62059 series.

The French version of this standard has not been voted upon.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 62054 consists of the following parts, under the general title: *Electricity metering (a.c.) Tariff and load control*:

IEC 62054-11: Particular requirements for electronic ripple control receivers

*(Replaces the particular requirements of IEC 61037.)*

IEC 62054-21: Particular requirements for time switches

*(Replaces the particular requirements of IEC 61038.)*

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 2 years from the date of publication.

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## INTRODUCTION

~~This standard distinguishes between protective class I and protective class II equipment~~

The test levels are regarded as minimum values to guarantee the proper functioning of the equipment under normal working conditions. For special application, other test levels might be necessary and should be agreed on between the user and the manufacturer.

For information, the relevant parts of IEC 62052, IEC 62054 and IEC 62059 are listed below.

IEC 62052-21:2004, *Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*  
Amendment 1 (2016)  
(Replaces the general requirements of IEC 61037 and IEC 61038.)

IEC 62052-31:2015, *Electricity metering equipment (AC) – General requirements, tests and test conditions – Part 31: Product safety requirements and tests*

IEC 62054-11 *Electricity metering (a.c.) – Tariff and load control – Part 11: Particular requirements for electronic ripple control receivers*  
(Replaces the particular requirements of IEC 61037.)

IEC 62054-21 *Electricity metering (a.c.) – Tariff and load control – Part 21: Particular requirements for time switches*  
(Replaces the particular requirements of IEC 61038.)

IEC 62059-11 *Electricity metering equipment – Dependability – Part 11: General concepts*

IEC 62059-21 *Electricity metering equipment – Dependability – Part 21: Collection of meter dependability data from the field*

IEC 62059-41 *Electricity metering equipment – Dependability – Part 41: Reliability prediction*<sup>1</sup>

## INTRODUCTION TO AMENDMENT 1

The purpose of this amendment is to identify and remove all safety related requirements and tests of IEC 62054-21:2004 that are replaced and extended by the complete set of requirements and tests in IEC 62052-31:2015.

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<sup>1</sup> To be published.

## ELECTRICITY METERING (AC) – TARIFF AND LOAD CONTROL –

### Part 21: Particular requirements for time switches

#### 1 Scope

This part of IEC 62054 specifies particular requirements for the type test of newly manufactured indoor time switches with operation reserve that are used to control electrical loads, multi-tariff registers and maximum demand devices of electricity metering equipment.

The time switch keeps the real time, it may keep the date, it may be capable of handling leap years, it may support daylight saving, i.e. it modifies the deviation of local time to GMT according to the relevant regulations. The time switch may have a synchronization capability. The time switch also holds a schedule of switching actions, which may be specified in terms of time, day of the week, date within a month or a year. The time switch controls the output elements depending on the time and the schedule of switching actions stored.

This standard gives no requirements for constructional details internal to the time switch.

In the case where time switch functionality is integrated into multifunction electricity metering equipment, the relevant parts of this standard apply.

This standard covers time switches with analogue mechanical dials or electronic digital displays that are

- synchronous; or
- crystal-controlled.

This standard does not cover the acceptance tests and the conformity tests. Nevertheless, an example of what could be an acceptance test is given in Annex A .

The dependability aspect is covered by the documents of the IEC 62059 series.

The safety aspect is covered by IEC 62052-31:2015.

When using this standard in conjunction with IEC 62052-21, the requirements of this standard take precedence over those of IEC 62052-21 with regard to any item already covered in it.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62052-21:2004 *Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment*<sup>2</sup>  
Amendment 1 (2016)

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<sup>2</sup> ~~To be published.~~

### 3 Terms and definitions

For the purposes of this document, the definitions of IEC 62052-21 apply.

### 4 Standard electrical values

The values given in IEC 62052-21 apply.

### 5 Mechanical requirements and tests

The requirements and tests specified in IEC 62052-21 and the following apply.

#### 5.1 Dials

For time switches with analogue mechanical dials:

- the direction of rotation of the dials shall be marked by an arrow;
- the hour dial (if any) shall be capable of being read to the nearest minute;
- when required, the hours on the day dial and the days on the week dial should be marked in a different colour;
- all markings shall be indelible and easy to read.

#### 5.2 Digital display

For time switches with electronic digital display:

- the display shall be easy to read. If the same display is used for displaying different values, then a code or other indication shall be displayed to enable each value to be identified;
- the display time of each displayed value shall be at least 6 s.

### 6 Climatic conditions, requirements and tests

The conditions, requirements and tests specified in IEC 62052-21 apply.

### 7 Electrical requirements and tests

#### 7.1 Supply voltage

##### 7.1.1 Supply voltage range

The values specified in IEC 62052-21 apply.

##### 7.1.2 Supply frequency range

IEC 62052-21 applies.

##### 7.1.3 Power consumption

IEC 62052-21 applies.